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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,542	08/26/2003	Jiawen Dong	135947-1	4668

23413 7590 08/26/2004

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EXAMINER

ZEMEL, IRINA SOPHIA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,542

Applicant(s)

DONG ET AL.

Examiner

Irina S. Zemel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-26-04; 11-26-03
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Double Patenting

Claims 1-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-46 of copending Application No. 10/648524. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications disclose methods for separating a polymer from a solvent, comprising introducing a superheated polymer-solvent mixture to an extruder, wherein the extruder comprises an upstream vent and a downstream vent; removing solvent from the superheated polymer-solvent mixture via the upstream vent and the downstream vent; and isolating a polymer product from the superheated polymer-solvent mixture; wherein the polymer-solvent mixture comprises a polymer and a solvent, wherein the amount of polymer in the polymer-solvent mixture is less than or equal to about 75 weight percent based on the total weight of polymer and solvent. The claims in both applications further claim identical extrusion conditions and similar extruder structures. Any difference in the conditions and extruder structures claimed in dependent claims is known in the art and would have been obvious for an ordinary artisan. See, for example, extrudes systems disclosed in Silvi et al., US Pub. No. 2003/0236384. The difference between the independent the claims 1, 31 and 32 of the '524 applications and independent claims 1 and 43 of the instant application is that the claims of the '542 applications are directed to a polymer genus, while the claims of the instant application are specifically directed to poly(arylene ether). The genus claimed in claims of the '524 application would have

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been obvious from any species of the genus, such as claimed poly(arylene ether) and other polymer species, such as polyetherimide, polycarbonate, polyamide, polyarylate, polyester, polysulfone, polyetherketone, polyimide, olefin polymer, polysiloxane, explicitly claimed in dependent claim 2. Specific polymer, poly(arylene ether), would have been obvious from dependent claim 28 explicitly claiming such polymer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 1-47 are allowable over the prior art of record.

The following is a statement of reasons for the indication of allowable subject matter: The invention is drawn to a method for separating a polymer from a solvent, comprising;

introducing a superheated polymer-solvent mixture to an extruder, wherein the extruder comprises an upstream vent and a downstream vent;

removing solvent from the superheated polymer-solvent mixture via the upstream vent and the downstream vent; and

isolating a polymer product from the superheated polymer-solvent mixture; wherein the polymer-solvent mixture comprises a polymer and a solvent, wherein the amount of polymer in the polymer-solvent mixture is less than or equal to about 75 weight percent based on the total weight of polymer and solvent, and wherein the polymer is a poly(arylene ether).

The gist of the invention lies in superheating poly(arylene ether) solution of specified concentration prior to feeding it to the extruder for removing volatiles from the polymer in the extruder. The method results in high degree of volatile removal.

The art of record discloses various method of devolatilizing poly(arylene ethers) polymers in extruder, but fail to disclose steps of superheating polymer solutions prior to feeding it to devolatilization extruder. See, for example, US Patent 4,369,287 or 4,831,115. Further, the art recognizes advantages fro superheating of polymer solution prior to separating of solid polymer from solution, see US 6,720,467 to Cistone et al., (hereinafter "Cistone"). However the process disclose to Cistone is limited to process of polystyrene waste reclamation and does not provide teaching or suggestions for removal of solvent from solutions containing poly(arylene ether).

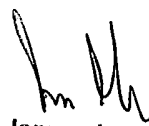
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ISZ



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700